THE SCIENTIFIC AMERICAN.

THE ADVOCATE OF INDUSTRY AND ENTERPRISE, AND JOURNAL OF MECHANICAL AND OTHER IMPROVEMENTS.

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THE
SCIENTIFIC AMERICAN,
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RUFUS PORTER,—Editor.

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The Modest Retort.

A suspicious nabob of the east,
Haughty, being great, purse-proud, being rich,
A governor or a general at least,
I have forgotten which—
Had in his family an humble youth,
Who went from England in his patron's suit—
An unassuming boy, and in truth,
A lad of decent parts and good repute,
But yet with all his sense, excessive diffidence
Obscured his merit.

One day at table, flushed with pride and wine,
His honor proudly free, severely merry,
Conceived it would be vastly fine
To crack a joke upon his secretary.
"Young man," said he, "by what art, craft or trade
Did your good father gain his livelihood?"
"He was a saddler, sir," Modestus said,
"And in his line was reckoned good."
"A saddler, eh! and taught you Greek.
Instead of teaching you to sew;
And why did not your father make
A saddler, pray, of you?"

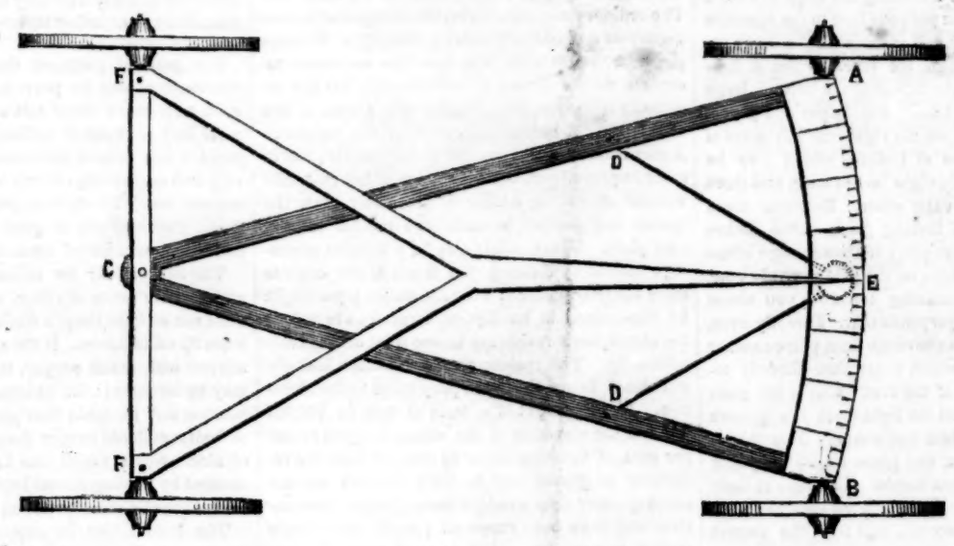
Each parasite then, as in duty bound,
The joke applauded, and the laugh went round.
At length Modestus, bowing low,
Said, (craving pardon, if too free he made,)
"Sir, by your leave I fain would know
Your father's trade?"

"My father's trade!—by heaven, that's too bad;
My father's trade!—why blockhead, thou art mad!
My father sir, did never stoop so low—
He was a gentleman, I'd have you know!"

"Excuse the liberty I take,"
Modestus said, with archness on his brow,
"Pray, why did not your father make
A *gentleman* of you?"

PERQUISITES OF OFFICE.—Among the articles for which the Clerk of the House of Representatives has issued proposals, to supply the members of that honorable body at the next session, are "800 English pen knives, four blades, best pearl, stag or buck handles;" and 240 with two blades, of the same quality—making 1040 pen-knives, for the use of 228 gentlemen, for the period of three months—four a-piece, and a small surplus.

THE COMPASS CAR.



INTRODUCTION.—Every draughtsman, and many painters and architects, have often experienced much difficulty, and perhaps embarrassment for want of some instrument adapted to the purpose of describing curves of extraordinary radius. Some person has projected and introduced an instrument called a compass-beam, which may be used for describing curves of eight or ten feet radius, though rather inconveniently: but if an occasion occurs requiring a curved line on a radius of twenty or thirty feet, these are useless, and no instrument has been hitherto introduced that would answer this purpose. But a compass-car constructed on the plan represented above, may be readily and conveniently employed in describing any required curve, even to 100 feet radius.

EXPLANATION.—Four metallic wheels are nicely fitted to run on two axles, on the principle of a common wagon; the rear axle consisting of a sector of a circle, A B, graduated to indicate different radii, the curves of which the instrument may be made to describe. From each end of this section a radius-bar extends forward, and the two unite and are connected to the forward axle by a centre pivot at C. From the points D D, of the radius-bars, two elastic wires extend to a little verticle tube, placed directly under the centre of the rear axle, near E,—the tube being represented by dotted lines, merely. This tube contains a short pen or pencil, which being gently pressed on the ground, board or paper by the elasticity of the wires, produces a line as the car is moved forward. An index, E F F, is attached to the forward axle in such a manner as to press, by its own elasticity, on the graduated section at E. With the central position of the index, the pencil will describe a straight line; but remove the index one point to the right or left, and move the car forward, and the pencil will describe a curve or a radius of 200 inches. It will be readily seen that the farther the index is removed from the centre, the bolder will be the curve described, and vice versa. A car of this description, on a scale even smaller than the drawing, will answer a good purpose; but on a large scale, the car, without the pencil, may be made to describe and track the required curve for laying the rails on a new railroad. It is not the intention of the inventor to procure a patent, but to make it free for the use of the public. It has been put in operation, and succeeds well.

Rechabites.

The English traveller, William Buckingham mentions in some parts of a recent narrative of his travels in Asia, that he visited the Rechabites, who live in tents, and adhere faithfully to their pledge, in obedience to the command of Jonadab, their father. But we have another witness of the present existence of this remarkable people in the Rev. Joseph Wolff, a Missionary of great celebrity, who states as follows:—"On my arrival at Mesopotamia, some Jews that I saw there, pointed me to one of the ancient Rechabites. He stood before me wild, like an Arab, holding the bridle of his horse in his hand. I showed him the Bible in Arabic and Hebrew, which he was rejoiced to see, as he could read both languages, but had no knowledge of the New Testament. After having proclaimed to him the tidings of salvation, and made him a present of the Hebrew and Arabic Bible and Testament—I asked him whose descendant he was? 'Mossea,' said he boisterously, 'is my name, and I will show you who are my ancestors.' On which he immediately began to read from the 5th to the 11th verse of Jeremiah, 35 Where do you reside? said I. Turning to Gen. X. 27, he replied, at Hadoram, now called Sanan by the Arabs, and again referring to the same chapter, 20th verse, he continued, 'At Mesha, now called Mecca, in the desert around those places; we drink no wine and plant no vineyards, and sow no seed, and live in tents, as Jonadab our father commanded us. Hodab was our father too. Come to us, and you will find us *sixty thousand* in number, and you see thus that the prophecy has been fulfilled.' 'Therefore thus saith the Lord of Hosts the God of Israel; Jonadab the son of Rechab, shall not want a man to stand before me forever,' and saying this, Mossea the Rechabite mounted on his horse and fled away leaving behind a host of evidence in favor of Sacred Writ."

The same respectable Missionary describes the Rechabites as fine healthy looking men, of great simplicity, kind manners and very intelligent.

INCONSISTENCIES IN THE ENGLISH LANGUAGE.—Foreigners complain much of the difficulty of learning the English language, on account of the diversity of pronunciation of words of similar formation. Among some of its most prominent and troublesome deformities may be reckoned the termination of *u-g-h*, and should, in our opinion be abolished altogether. Of the awkwardness of this termination, we give a few examples below:

As Spelled.	*As Pronounced.*
Bough,	Bow.
Cough,	Cauf.
Dough,	Doe.
Hough,	Hock.
Rough,	Ruff.
Through,	Throo.

THE OCEAN.—The mean depth of the ocean is calculated by La Place and others at two miles, and its cubic contents at 290 millions of miles. The Pacific Ocean contains 88 millions of square miles, the Atlantic 25 millions, and the Indian ocean 17,000. The Southern Ocean to 40 or 50 degrees, is 30 millions; the Mediterranean one million, the Black sea 170,000 the Baltic 175,000, the North Sea 160,000. The Persian Gulf is 600 miles long, and the Red sea is 1,500.

A SURE CHARGE.—A merchant of Mississippi, during a day's business in which he had been crowded with customers, sold a saddle of the value of forty dollars, but had neglected to make the charge. Next day he missed the saddle and recollected the fact of the sale, but not the individual who had bought it. After racking his memory for some time to no purpose, he directed his clerk, Jim, to turn to his ledger alphabet and read off the W's, then the S's, the B's, the C's, and other letters in succession, all to no purpose. Tired out by the mental exercise, and as the readiest way of settling the difficulty, "Jim," said he, "charge a saddle to every one of the customers." This was accordingly done. When the planters had got their cotton in, and settling times came round, the bills were presented, and if occasionally one man, more prudent than his neighbor, went through the drudgery of examining a long list of sundries got by different members of the family, he might possibly discover a saddle which they had *not* got, or one more than he had got, and object to the item, it would be struck out of course, alleging there was some mistake. When all the accounts had been settled up, "Well, Jim," said the store-keeper, "how many customers paid you for that saddle?" Jim examined and reported *thirty-one*. "Little enough," exclaimed his employer, "for the trouble we have had to find out who had got it."

CAPT. MAY'S OWN DESCRIPTION OF HIS CHARGE.—Having had the pleasure of a long conversation with Capt. May, we finally asked him to give us a description of his charge, that we might get at the exact particulars. The gallant captain twisted about his long beard, evidently somewhat confused and after considerable hesitation said:—"Why, you see, the fact is, any of the boys would have given their lives to have had the chance to have charged the batteries, only I was the lucky one in getting the order. After the old man gave the order, I rode down the road, my men following, of course, where we met Ridgely: he blazed away, and let me pass, and we just rode over the guns, and that is all about it."—*N. O. Tropic.*

DON'T KNOW HIS OWN SON.—There is a good story told of Jarvis, the painter. Starting out one day, with two or three companions, for a spree, the ever-observing eye of the painter was attracted by some boys, actively engaged at play, and particularly by one of those geniuses "born to rule," who was leading in their evolutions. "Come here, my man," cried Jarvis, "what is your name?" "My name is John, and I am not *your* man," quickly answered the boy. "John? why that is my name," said Jarvis, "what is your other name?" "Wesley." "John Wesley? that is my name too. Any more names?—the more the merrier." "Jarvis," said the boy. "Jarvis? John Wesley Jarvis! Why, who was your farther?" was the earnest inquiry. "*He's Jarvis the painter, and mother says he's a very bad man, too.*"

TURTLE DOVES AT SEA.—On the 1st July, Capt. J. Kyle, of the brig Jane and Ann, when eighty-four miles from land, and on his passage to Hamburg, picked up a pair of turtle doves, which had alighted on the topmast of his vessel. They were in an exhausted state, but soon recovered, and are now in his possession.

A LARK AND A HAWK.—It may be questioned whether the human mind could have shown more sagacity than is exhibited in the following case of instinct in a bird. As a gentleman was travelling on horseback a short time since, in the West of Norfolk, England, a lark dropped on the pommel of his saddle, and spreading its wings in a submissive manner, cowered close to him. He stopped his horse, and sat for some time in astonishment, looking at the bird, which he supposed to be wounded; but endeavoring to take it, it crept around him, and placed itself behind. Turning himself on the saddle to observe it, it dropped between the legs of the horse, and remained immovable. It then struck him that the poor thing was pursued, and as its last resort hazarded its safety with him, when looking up, a hawk was perceived hovering directly over them. The poor bird again mounted the saddle, under the eye of its protector; the disappointed hawk shifted his station, and the little fugitive, watching its opportunity, darted over the hedge, and was hid in an instant.

AFRAID TO LEARN.—It is related that Galileo who invented the telescope, with which he observed the satellites of Jupiter, invited a man who was opposed to him, to look through it, that he might observe Jupiter's moons. The man positively refused—saying, "If I should see them, how could I maintain my opinions, which I have advanced against your philosophy?" This is the case with many. They will not look at the truth—they will not hear it, for fear that the arguments which they have framed will be destroyed, and they may be obliged to give up their vicious indulgences.

GENIUS.—Men of talent and genius are often poor, because they wait proudly for the world to seek them, to acknowledge their merit and record it. Hence they often lie like unworked gold in a mine, till accident lays them open to the light. Men of inferior abilities, struggle into notice by perseverance, and thrust themselves into places, which their superiors expect to have offered to them. Hence the sight of a dunce rolling by in his carriage, and the genius walking in a thread-bare coat.

POINTS OF HONOR.—Col. Montgomery was shot in a duel about a dog; Capt Ramsay in one about a servant; Mr. Fetherston in one about a recruit, Stearn's father in one about a goose; another gentleman in one about "an acre of anchovies;" one officer was challenged for merely asking his opponent to enjoy the second goblet; and another was compelled to fight about a pinch of snuff; General Barry was challenged by a Captain Smith, for declining a glass of wine with him at dinner in a steamboat, although the general had pleaded as an excuse that wine invariably made him sick; and lieutenant Crowther lost his life in a duel because he was refused admittance to a club of pigeon shooters.

THE ALPHABET.—The twenty-six letters of the alphabet may be transposed 624,448,401,733,239,360,000 times. If all the transpositions were printed, they would make a pile of books a thousand feet high, and covering ten acres of ground.

Humbolt gives some curious words, which are used among the native Mexicans. A kiss, he says, is called *telenamiquitzitli*; and some person has remarked that "it feels just as it is spelt."

A LIST OF PATENTS ISSUED FROM THE 14TH MARCH TO 11TH APRIL, 1846.

(Continued from No. 47.)

To William Yates and Denis Dolan, of Manchester, England, for improvement in Fire and Water-Proof Cements. Patented March 14th, 1846.

To Seneca Ladd, of Danville, Vt., for improvement in Horse Rakes. Patented March 14.

To David Harkness, of Raisin, Michigan, for improvement in Grain Rakes. Patented March 14.

To William A. Pratt, of Alexandria, D. C., for improvement in Coloring Daguerreotype Pictures: patented March 14.

To Isaac P. Smith, of Orangetown, New York, for improvement in Fan Blowers: patented March 14th.

To Edwin K. Gale, of New York City, for improvement in Abdominal Supporters: patented March 14.

To George Nichols, of Trumbull, Conn., for improvement in the manner of connecting the body of a Carriage with the Perch by means of Springs: patented 10th April, 1844. Re-issued March 14th, 1846.

To John and Charles Hanson, of Huddersfield, England, for improvements in the Machine for making or manufacturing Pipes or Tubes of lead and other metallic substances—(assigned to B. Tatham, Henry B. Tatham, George N. Tatham.) Patented 31st August, 1837, in England: re-issued in America the 14th March, 1846.

To R. P. Cunningham, of Abington, Conn., for improvement in the mode of throwing Shuttles in Power Looms: patented 25th April, 1843; re-issued March 14th.

To Henry Biggins, of New York City, for Design for Spittoons: patented March 14th, 1846.

To Willis H. Johnson, of Springfield, Illinois, for improvement in the Rotary Pump: patented 21st March.

To Richard Halloran, of New York city, for improvement in Ventilating Hats: patented 21st March.

To Samuel Rust, of New York City, for improvement in Wick Tubes for Lamps; patented 21st March, 1846; antedated 20th January, 1846.

To Jacob Cooke and John Strickler, of Strasburgh, Va., for improvement in Trusses: patented 21st March.

To Simon Whiton, of Hartford Conn., for improvement in making Vegetable Beer: patented 21st March.

To Benjamin W. Stratton, of Philadelphia, for improvement in [illegible] Everett); patented 21st March.

To David B. W. Hard, of Bethlem, Conn., for improvement in Ladies' Trusses; patented 21st March.

To James Ogden, and D. R. Hart, of Troy, N. Y., for improvement in Carriage windows: patented 21st March.

To Hezekiel P. Nuckols, Glasgow, Ky., for improvement in Machinery for Cutting Screws, &c., for bedsteads and chairs: patented 4th April.

To David Percival, of Middletown, Del., for improvement in Railroad Gates: patented 4th April.

To John R. Remington, of Lowndes Co., Ala., for improvement in attaching horses to one-wheeled carriages: patented 4th April.

To Thomas F. Wenman, of New York city, for improvement in the Filtering cock: patented 4th April.

To James Hibson, of New York city, for improvement in the frames of travelling trunks; patented 4th April.

To Patrick Fitzsimmons, of West Troy, N. Y., for improvement in cleansing Fish Oil: patented 4th April.

To Jonathan F. Ostrander, of New York city, for improvement in Filtering Cocks: patented 4th April.

To Bennet Woodcroft, of Manchester, England, for improvement in Spiral Propellers: patented 4th April.

To Alva B. Taylor, of New York city, for improvement in checking the Momentum of Printing presses: patented 4th April.

To Washburn Race, of Seneca Falls, N. Y., for improvement in Registers for Stoves: patented 4th April.

To Lorin M. Whitman, of Pike, New York, for improvement in Spring Tooth Horse Rakes: patented 4th April.

To George J. Prantiss, of Tiverton, R. I., for improvement in machinery for Rinsing Calicoes, &c.: patented 4th April.

To Daniel Deshon, 2nd, of New London, Conn., for improvement in Paddle Wheels: patented 4th April.

To Thomas Glasco, of Wilmington, Del., for improvement in Car Wheels: patented 4th April.

To Joel L. Ramsom, of Mill Port, N. Y., for improvement in Brick Presses: patented 4th April.

To Charles King, of Scipio, N. Y., for improvement in Churn Dashers: patented 4th April.

To Jacob H. Gemrig, of Philadelphia, for improvement in Spring Lancets: patented 11th April.

To Thomas Hartley, of Pittsburgh, Pa., for improvement in Brick Presses: patented 11th April.

To Joshua H. Butterworth, of Dover, N. J., for improvement in Door Locks: patented 11th April.

To Samuel F. B. Morse, of New York city, for improvement in Electro Magnetic Telegraph: patented 11th April.

FORMATION OF HAIL.—Some persons are puzzled to account for the formation of hail stones, in the atmosphere, when the temperature of the earth's surface is above ninety. Mr. Espy, in his meteorological lectures, gives a beautiful description of the formation of a cloud, and [illegible] cloud is formed, he says, rain drops are generated—but sometimes these cannot reach the earth on account of the violence of the upward current, but are, on the contrary, carried to the region of perpetual congelation, there frozen, and thrown off at the sides of the hail cloud.

SCIENTIFIC AMERICAN

NEW-YORK, THURSDAY, AUGUST 20.

BACK NUMBERS WANTED.—We shall send copies of this number to several of our former patrons for the purpose of presenting the proposition that if those who have any of the first nine numbers of this paper on hand, will send them to this office, we will end them, in order, an equal number of new papers, as they are issued weekly.

Drawings of machinery, engraving on wood, and lithographic drawings, neatly executed, at the lowest prices, at this office.

POST MASTERS—Who receive this paper, will confer a special favor by mentioning the subject occasionally to scientific mechanics. The aid, also and influence of all our kind patrons, in extending the notice and circulation of this paper, is most respectfully solicited.

Inflating Balloons.

It may be supposed that nearly all the citizens of the United States have seen balloons, or at least pictures of them, and have some general ideas of the principle by which they are made to ascend. But as we have had frequent applications for information on the subject of the mode and expense of inflating them, we shall describe the process in a manner more explicit than heretofore published. A number of casks are provided, and set up on end, the upper ends being open. In each cask is placed a quantity of sulphuric acid, diluted with five times its weight of water. Each pound of acid will produce ten cubic feet of hydrogen gas: therefore, if the balloon to be inflated is required to contain 10,000 cubic feet of gas, 1000 lbs. of acid will be required. Each cask is provided with a covering of painted cloth, which is made to fit the top; and from each of these caps, a tube of painted cloth or leather extends to a point directly under the balloon, which is placed centrally, in a collapsed form, and with the open part downward, Thus arranged, a quantity of iron filings and turnings, equal in weight to the original quantity of acid, is put in the casks, and the cloth caps are lashed tight over the tops. The acid immediately commences corroding and dissolving the iron, by which action the oxygen of the water unites with the iron, and its other component, hydrogen, is liberated in the form of gas, which, passing through the tubes to the balloon, readily inflates it. When ebulition has nearly ceased in the casks, a fresh supply of water, nearly equal to the original quantity, may be added, which will occasion a renewal of the chemical action till the iron is nearly all dissolved. The power of boyance of this gas is a trifle more than one ounce per cubic foot; whence it may be calculated, that the buoyancy of a balloon of 10,000 cubic feet will be at least six hundred pounds. The weight of the balloon, if properly constructed, being made of silk or cambric, and thinly varnished, will not exceed 300 lbs., thus leaving a surplus of buoyancy sufficient to carry 300 lbs. extra, besides the appended car, lines, &c. The cost of the acid and iron will everage about four cents per pound; and the solution of iron will command about half the original cost.

BACK NUMBERS.—We announced some time since, that we had procured new engravings for the purpose of re-printing several of the early numbers of this volume; and we had actually contracted for the printing thereof: but having received a considerable quantity of those numbers from some of our local agents, we have supplied the principal demand for them; and on examining our books we can not discover a larger number than from 50 to 100 of our subscribers that are in want of them, and considering that the re-printing would not be less than two hundred dollars, we have concluded to endeavor to procure as many of the early numbers as practicable from those of our first subscribers who are not anxious to retain them, and thus supply the balance. We trust our readers will admit these facts to constitute an ample excuse for the publishers of this paper for not following up the original plan of re-printing.

PROGRESS OF IMPROVEMENT.—A Boston paper of 1823,—only twenty-three years ago,—contains an interesting announcement of the arrival of the first steamboat in that harbor from Portland. This boat was the "Patent," built and commanded by Capt. Seward Porter, the most decidedly enterprising man that had given life to the business of Portland prior to that time. The "Patent" had made the passage from Portland, 120 miles, in eighteen hours with twenty-seven passengers. The Patent subsequently made the trip in about fourteen hours, and the price of passage being five dollars, and the number of passengers increasing, Capt. P. made a fair business. There has lately been several boats running, carrying possengers for one dollar, and making the passage in eight hours.

MACHINE CARVING.—We have frequently spoken of a machine for ornamental carving of wood, from prepared patterns. We learn that a machine of this kind has been recently introduced in England, and that the carving of the new houses of Parliament has been effected thereby. We have learned nothing of the peculiar construction of that machine; but we have in preparation and shall soon present our readers with the plan of a machine by which twenty or more pieces may be cut, fashioned and finished by one operation, and governed by a single pattern.

MORE FUDGE.—The Cincinnati Gazette states that there is to be brought out shortly a great grand new invention of *infinitely* greater importance than the Magnetic Telegraph; but it is not at liberty to tell any body anything about it; no, no. We most heartily despise such humbuggery.

Curious Art.

TO PRODUCE THE EXACT LIKENESS OF ANY OBJECT, INSTANTLY ON PAPER.—This may be readily effected by laying the paper on a table, and holding a double convex lens (a common sun-glass) over it, and then placing a mirror over the lens, in an oblique position, so as to face partly towards the object that is to be represented. The rays of light, passing from the object to the mirror, will be reflected downward through the lens, and produce the likeness of the object in full colors on the paper. This experiment may be easily made in the evening, by reflecting the flame of the candle in this manner, which will appear very brilliand on the paper. But in order to render the reflection of an object distinctly visible by daylight, it may be requisite to exclude nearly all the light from the paper, except what falls through the lens. In all cases, the lens must be placed at a distance above the paper, according to its focus, at the distance at which it would contract the rays of the sun to the smallest point. A very convenient camera obscura, for drawing landscapes, or even portraits, may be constructed as follows: Make a box of boards, in the form of a regular cube, being one foot in length, breadth, and height; bore a hole of one inch in diameter, through the centre of the top; and on this, fix a double convex lens, the focus of which must reach the bottom of the box. Make an aperture of about six inches in length, and one in breadth, through one side of the box at the top, by shaving off, or hollowing the edge in such a manner, that when you put your face to the aperture to look into the box, it will exclude all the light except what falls through the lens. Make a hole through each end of the box, near the bottom, large enough to put in the hands, with paper and pencil. On the top of the box, on the right and left sides of the lens, fix two pieces of boards, which may be about four inches high, eight inches long, and three inches distant from each other. Between these boards, fix a piece of looking glass, three inches square, and facing from you; the lower edge of the glass being near the lens, on the side towards you; and the upper edge inclining towards you about thirty degrees from a perpendicular. Directly over, and nearly four inches above the lens, place another mirror, the centre of which must face directly towards the lower edge of the first. Cover the glass box so as to exclude all the light from the glasses except what falls on them horizontally from objects directly in front of you, and place a sheet of paper on the bottom of the box inside. The rays of light passing from objects in front, will be reflected from the first mirror to the second, and from the second through the lens to the paper, where you will have a perfect similitude of the objects in view, in full colors, and true perspective, and may trace them on the paper with a pencil or pen.

The Drummond Light.

Since the commencement of the presen century, through the rapid extension of the science of Chemistry, vast improvements have taken place in the methods employed for artificial illumination. Thus, the general introduction of gas-lights in most of our larger cities, has furnished a light for streets and dwellings, much superior to that previously obtained from oil or candles. The Argand Lamp has been introduced, and with the aid of parabolic reflectors, nas been successfully applied to Light-House illumination. The Bude, Drummond, and French lights, with many others, have been given to the world, and have respectfully won for themselves a large share of public favor. Of these, the one known, from its inventor, as the "Drummond Light," probably ranks the first. In 1824, Lieut. Drummond, then engaged in a governmental survey of Ireland, in which it was frequently desirable to take the respective bearings of points, some 70 or 80 miles distant, felt the want of a light for communicating such information, that could be visible at a greater distance than any yet known. The firing of Rockets and similar means, that were usually resorted to, could only be employed to advantage, where the stations were not widely separated, and when the atmosphere was quite clear from any haze, which was seldom the case. It had for a long time been known that lime, with some of the other earths, became very luminous when exposed to an intense heat—such, for instance, as that obtained by combining a jet of oxygen gas with the flame of spirits of wine; but the happy idea of rendering this property of the earth's subservient to practical purposes, was reserved for Lieut. Drummond. After a series of experiments, he found that by throwing the united flame of spirits of wine and oxygen gas upon a *ball of lime*, only three-eighths of an inch in diameter, a light was obtained of such brilliancy as to be fully equal to that emitted from thirteen Argand Burners; almost too intense for the eye to bear. Of later years, it has undergone a slight modification, hydrogen gas having been substituted for the spirits of wine, as being less expensive, and perhaps otherwise preferable. The apparatus is very simple: it consists of two gasometers, in which the respective gases are generated: from thence proceeds two tubes, which unite near the ball, so as to form, there, but one. The gas is conveyed by these tubes to the ball of lime, and there ignited; and, with the ball is connected an arrangement for replenishing the balls as fast as consumed: if desirable, a parabolic reflector is added, thus rendering it complete. This light was found to answer admirably the purpose for which it was designed,—for signals, to be given at great distances. In several trials made with it to test its powers, it was distinctly seen as a clear, white, vivid light, at a distance exceeding 70 miles; thus placing its claim to superiority over all others, beyond dispute.

THE CLIMATE OF OREGON.—We can not fully comprehend the reason that the winters in Oregon are so much more mild than in the same latitude on the Atlantic coast. A letter dated in March last, from a gentleman whose residence in Oregon is nearly parallel with Boston, states that there had been no frost nor ice except a little in December, which lasted but a few days. Flowers had made their appearance in February.

Science of Mechanics.

RAILROAD RESISTANCE.—The only resistance to be regarded in propelling trains of cars on Railroads are those of the friction of the axles in the boxes, the atmosphere, and of gravity when ascending inclinations. The first depends much on the size and construction of the axles and boxes, and in general may be estimated at ten lbs to every ton of the weight of the cars and freight, under every velocity; but may, as it is well known, be reduced by means of friction rollers, to less than one lb. per ton. The atmospheric resistance is proved by experiment to be much less than it appears in theory, and is less in proportion on long trains of cars than on a single car or engine; and this difference is in consequence of the circumstance that when several cars are connected, they drive a considerable quantity of air along with them, which prevents in some measure, the encountering of fresh quantities by each car. The ordinary atmospheric resistance against a locomotive or a single car, under a velocity of 20 miles per hour, is about 50 lbs., and this resistance increases as the square of the velocity; but this resistance is no more than doubled with a train of five or six cars. A considerable share of this resistance is encountered by the spokes of the wheels; but in some improved cars the wheels are either cast solid without spokes, or, which is the better plan, the spokes are encased between two circular disks of iron plate. There might also be a decided advantage gained by forming the fronts of the engines more sharp or pointed: even the smoke pipes might be constructed in an iliptical form so as to reduce the atmospheric resistance to one third of what it is ordinarily. The resistance of gravitation is easily calculated, being always in proportion to the elevation. If the weight of a train of cars be 200,000 lbs. and the elevation of the ascent is equal to one per cent. of the distance, or 43 feet per mile, the resistance of gravity will be 2000 lbs.—an amount much greater than would, without practical demonstrations, have been supposed possible for a single engine to overcome. But in most cases of elevation the engine is much aided by the momentum already acquired. Various ingenious modes, have been devised, for overcoming this resistance on heavy ascents, in case the strength and traction of the ordinary locomotive should prove inadequate: but hitherto, very few if any of these inventions have been adopted; routes having been found for the location of all our principal roads, in which no inclinations were required of heavier grades than could be surmounted by our best engines with ordinary trains of cars. There is seldom witnessed a scene more astonishing to theorists, than that of a locomotive engine drawing a long train of loaded cars, and running with the speed of a courser up a heavy grade or hill-side, some grades on the Worcester and Western railroads, for example,—on which it is readily demonstrable that the propulsion of some trains require more than 100 horse-powers, although drawn by an engine rated at only about fifty. This is one of the many instances in which practice goes ahead of theory. There have been certain plans projected, however, whereby a surplus of power may be accumulated by a train while passing over descending grades, and this power held in readiness to be applied in aid of the engine while ascending; thus virtually equalizing and reducing all grades to a level. But we have seen none of these plans adopted by Railroad Companies or their Agents, and they probably will not be while there is a demand for railroads on such routes as may be reduced to very moderate grades. Such improvements may be soon introduced, however, as will enable locomotives and trains to run over hills and valleys with facility, where routes for level roads can not be found.

AN EQUILIBRIUM.—We were risibly excited the other day, by the antics of a Vermonter, who was carelessly crossing Fulton-street: he had proceeded to the middle of the street, when he discovered a cab approaching from the west, and at the distance of about twety feet. He suddenly halted with a nervous exertion, and attempted to retreat, but considering he was precisely in the range of the cab, and it was as cheap going forward as retreating, he was about to spring forward, when thinking again he was not quite certain which course was best, he again looked at the cab to see whether it was inclined to veer to the right and left. During this brief conflict of ideas, and hurried deliberations as to the best course to persue, he stood with his feet extended to a considerable distance apart, and alternately sprung the instep of each foot, as *pro* or *con* preponderated in his mind, till the cab-horse fairly came on to the frightened man, who could only extend his open hand towards the horse, as if to retard his progress, till he should have time to make up his mind which way to move. The driver, seeing the prediciment, suddenly *brought up* the horse, which being under excellent subjection, had by great exertion succeeded in effecting a cessation of motion just as his nose came in contact with the terrified countryman, who then succeeded in getting underway, and cleared, looking wildly to the right and left, to see if there were any more cabs about to cross his track.

INCREASE OF CRIME.—There are reported to be in the Boston House of Correction, one hundred more prisoners than there were at this time last year. The reason is obvious; since the temperance cause has prevailed against licences through the country, many incorrigible rummers have resorted to Boston for their sprees, which keeps the city in a turmoil. This fermentation will tend to clarify society eventually, however.

Arts and Trades.

SOLDERING.—To unite two pieces of the same or different metals by fusing some metalic substance upon them, is called *soldering*. It is a general rule that the solder should be easier of fusion than the metal to be soldered by it. It is, in the next place, desirable, though seldom absolutely necessary, nor always attempted, that the solder and the metal to which it is intended to be applied, should be of the same color, and of the same degree of hardness and malleability.

Solders are distinguished into two different classes, viz. the hard and the soft solders. For the hard solders, which are ductile, and admit of being hammered, some of the same sort of metal as that to be soldered, is, in the greatest number of instances, alloyed with some other which increases its fusibility. Some of the facts already detailed, respecting the metals, prove that the addition made with this view need not always be itself easier of fusion.

The solder for platina is gold, and the expense of it will, therefore, contribute to hinder the general use of platina vessels, even in chemical experiments.

The hard solder for gold, is composed of gold and silver: gold and copper; or gold, silver, and copper. Goldsmiths usually make four kinds, viz. solder of eight, in which, to seven parts of silver, there is one of brass or copper; solder of six, where only a sixth part is copper; solder of four, and solder of three.—But many who may have occasion to solder gold, cannot encumber themselves with these varieties.

For general purposes therefore, the following composition may be provided; melt two parts of gold, with one of silver and one of copper; stir the mass well to make it uniform, add a little borax in powder and pour it out immediately. If cast into very thin narrow slips, it will be more handy for subsequent use. To cleanse gold which has been soldered, heat it almost to ignition, let it cool, and then boil it in urine and sal ammoniac.

The hard solder for silver may be prepared by melting two parts of silver with one of brass. It must not be kept long in fusion, lest the zinc of the brass fly off in fumes. If the silver to be soldered, be alloyed with much copper, the proportion of brass may be increased: for example, the following composition may be used; four parts of silver and three of brass rendered easy of fusion by a sixteenth part of zinc. Silver which has been soldered, may be cleaned by heating it, and letting it cool, as directed for gold, but it must be boiled in alum water.

The hard solder for copper and brass, is a soft fusible sort of granulated brass, known to artists by the name of speltre. It consists of brass mixed with an eighth, or a sixth, or even one-half of zinc. The braziers use no other kind of hard solder. As speltre melts sooner than common brass, it serves for the solder of the latter as well as copper.

Standard silver makes an excellent solder for brass. It is more fusible than spelter, proportionably easier to manage, and equally as durable. A slight demand for silver solder, may, to many, be supplied at a cheap rate, in consequence of the number of the small silver articles in use, and which are frequently wearing out.

Iron may be soldered with copper, gold, or silver. Brass or speltre is most commonly used, and the operation is then called brazing; but a carbonate of the same metal, viz. the dark gray or most fusible sort of pig iron, called No. 1, is the most durable solder that can be used. The pig iron loses some brittleness, and the malleable metal becomes harder in the proximity of the parts soldered.

The parts upon which hard solder is intended to operate, are touched with a finely powdered borax moistened with water. They must, also, as in all soldering and tinning operations, be perfectly clean. The borax quickly running into a kind of glass, promotes the fusion of the solder, and preserves from oxidation the surface to which it is applied. The pieces intended to be soldered, are fastened together with iron wire, or secured by some contrivance having the same effect. Speltre being composed of so many grains, is apt to spread when the borax boils up: but just as it becomes fused, the workmen bring it to the place where it is wanted, by a slender iron rod. The flame of a lamp directed by a blowpipe against the solder covering the intended joint, which must be laid upon charcoal, is sufficient for small things. For large work, a common culinary fire may be made to effect the desired fusion, though a forge is still more convenient. The fire should not touch the work, nor the ashes be allowed to fall upon it.

The soft solders melt easily, but are partly brittle and therefore cannot be hammered. The solder for lead is usually composed of two parts of lead and one of tin. Its goodness is tried by melting it, and pouring about the size of a crown piece upon a table; little shining stars will arise upon it, if it is good.—By diminishing the proportion of lead, we form what is called a stray solder: we may also increase the proportion, which is advisable when we wish to solder vessels for containing acids; because lead is not so easily corroded or dissolved as tin.

The solder for tin may consist of four parts of pewter, one of tin, and one of bismuth, or two parts of tin, and one of lead; the latter is a composition much used.

BOILING UNDER PRESSURE.—Every body knows the effects of boiling various vegetable and animal substances in water unconfined, in which case the temperature cannot possibly be raised above 220 degrees; but water when confined in a strong boiler, and its temperature raised to 400 degrees, is capable of dissolving various substances which are ordinarily considered insolluble; such as bones, horns, leather and the hair of animals. We believe that but little attention has been given to experimenting on this subject; but that many valuable compounds for cements, and various utensils and fancy articles might be produced by a course of experiments on this subject there can be no doubt.

Tah-wah-te-hee and Oo-to-nus-tees-ke, two of the Cherokees charged with shooting young Wheeler, on Grand River, have been sent to Little Rock for trial.

VARIETY

The Troy (Pa.) Banner says that conversation should be "like a fine salad, composed of many ingredients, seasoned with salt, mustard and vinegar," but says not a word about the *pepper*.

The Mayor of Pittsburg having recently sent a slovenly male vagrant to jail, the keeper turned him away declaring he would not have such a dirty fellow in the jail.

Messrs. Davenport & Bridges, enterprising mechanics of Cambridgeport, Mass., have taken a contract to build one hundred baggage wagons for the use of the army.

A vein of quartz, containg a considerable quantity of gold, has been discovered in Dedham, about twelve miles from Boston:—the first gold mine ever found in Massachusetts.

A Nashua (N. H.) paper says the tide of travel from Boston to the White Mountains was never so great as the present season. Mount Washington is an excellent place to keep visitors cool.

About 150 persons are said to be *subteraneanizing* in the Mammoth Cave of Kentucky, where there is a band of music and a variety of other agreeables for their entertainment.

A Cincinnati paper remarks that the Grand Jury at a recent sitting, found *bills* against the officers of the Newton Bank:—but thinks it may be rather difficult to get the *bills* discounted.

The Portland (Me.) Bulletin states that the building now going on in that city, is double that of any former year; comprising nearly one hundred dwelling houses besides other buildings.

An officer of the navy writes from Calao on the Pacific, that they pay $12 a dozen for chickens, $2 per dozen for eggs, 40 cents a quart for milk, and three dollars a dozen for washing.

The first saw mill was built in England by a German in 1663: but so violent was the opposition against the labor reducing machine, that the builder had to escape for his life.

It is stated in some of our exchanges, that the property of John Jacob Astor of this city, would at 6 per cent., yield an annual income of $1,440,000; or $120,000 per month, or $4000 per day.

Mr. Stephen Talber, aged 90 years, lately died at Bristol, R.I., in the same house in which he was born, and in which his grandfather was born: a very old house.

A boy named Safford, a remarkable prodigy in mathematical calculations, is about to leave Vermont and commence a course of study at Harvard College, Cambridge, Mass.

The "razor strop man" sold about 100 strops while delivering a temperance lecture on the Green at New Haven recently. Being called a fool, he remarked there was *one more left* besides himself.

The ordinary time required for a trip from New York to China, is from 10 to 12 months; but by Whitney's projected railroad, and steamers, the trip may be made in *twenty-one days*.

There are now in the Oregon Territory upwards of 6000 Americans; 5 grist mills, 8 saw mills, and a large surplus of agricultural product. The population is rapidly encreasing.

About 100,000 men were employed 20 years in the construction of the great but worthless Egyptian pyramid. The steam power of the United States accomplishes an equal amount of labor every day.

The Post Master General contemplates a change in the dead letter department, so as to return to the writers all letters of business, whether they contain money or not.

A splendid pier about a mile long, is being built in Gowanus Bay, South Brooklyn. It will afford one of the finest promenades in the vicinity of New York.

The Grand Jury of Cayuga county have found a bill of indictment against an agent of the State Prison, for providing unwholesome food for the convicts. The name of the scamp is Chappel.

A severe hail-storm has been experienced at Dixmont, Me., by which many thousand panes of glass were broken. Many of the hail stones were six inches in circumference.

During a recent thunderstorm near Baltimore, a ball of electric fire came into the telegraphic office on the southern wire, with a loud report. One of the operators had a narrow escape.

The steamer Tributary lately arrived at St. Louis, from the Yellow Stone, with 18,000 buffalo robes, 2,500 buffalo tongues, besides a large number of packages of skins, furs, and pelts.

The Salem (Mass.) Register states that the monster sea serpent has been seen and leisurely examined for ten minutes, near Fort Point, by some fishermen of Salem.

It is reported that Gen. Semple, of Illinois, is to be appointed Governor of Oregon Territory on the arrival of the proper time for making said appointment. He is just the man.

The bell on the Universalist Church, in Petersham, Mass., has been sold on execution to satisfy a demand of the former minister of the parish. The *weather-cock* was not molested.

The distance from Independence, Mo., to California is 2,260 miles, with only one tavern on the whole route. Travellers are not likely to pass *that* tavern without lodging.

Government has advertised for 5080 *gallons of whiskey* for the use of the invading army, while the soldiers are exposed to sleep in drenching rains for want of decent tents.

O Come, Come Away.

A PARODY BY J. W. MUSCOTT.

Oh come, come away,
Intemperance forsaking,
The poison cup surrender up,
Oh come, come away;
Disease and death are in the bowl,
And swift destruction to the soul;
Then from its base control,
Oh come, come away.

For pain and the woe,
And all the drunkard's anguish,
Cold water sure 's a speedy cure,
Then come, come away;
O "touch not, taste not, handle not"
The fiery liquid in the pot,
Of rum—gin—piping hot,
But come, come away.

When sparkleth the wine,
When redeneth its color,
Then lift not up the fatal cup,
But turn, turn away;
Look not upon it then, forsooth,
It biteth, like a serpent's tooth,
Old age and blooming youth,
So come, come away.

When sweet Temperance,
Wife, husband, children blessing,
With evening songs her note prolongs,
Oh come, come away;
For surer far is he to cure
His ill whose drink is water pure,
And life's toils to endure,
Then come, come away.

Away to the polls!
Old men and young advancing,
With nerves of steel and hearts that feel,
Oh come, come away;
Like Freemen, take a noble stand,
And vote the monster from the land,
A true and noble bans,
Oh come, come away!

[From the Northampton Democrat.]

Sherburne Falls Band.

There is music on earth, there is music on high,
There is music to me when the night-winds float by,
There is music at morn, from the beautiful bird,
When its song among the dew-covered branches is heard;
There is music that's sweet, in the silvery rill,
As it joyfully leaps over valley and hill;
There is music that's bold, enchanting and grand,
From the pride of our town, the Shelburne Falls Band.

There is music I love, in the wild stirring song
Chanted forth by the wind, as it roareth along,
When it rocks the tall trees, in its fury about,
Making toys of its boughs, so majestic and stout;
And in the wild dirge of the dark pine tree,
Though it waileth so sad, there is music for me
For when the air's filled with these melodies grand,
I hear the bold notes of the Shelburne Falls Band.

There is music to me in the thunder-cloud's track,
When the lightning streaks red o'er its surface of black,
And when the hoarse thunder shakes earth with its roll,
I love the strange feeling, that filleth the soul.
It comes with the storm-cloud, and hurricane's breath,
Not speaking of terrors or breathing of death,
But it speaketh of all that is lofty and grand,
As oft do the notes of the Shelburne Falls Band.

There is music for aye in the beautiful glen,
By the wild woods re-echoed again and again,
And the bright pearly foam specs the lakelet so fair,
Oh beauty and music are both entered there.
And tinkling along like a fairy-toned bell,
A beautiful streamlet winds down through the dell;
And when the breeze sweepeth that mist-covered land,
It sounds like the notes of the Shelburne Falls Band.

Truth.

Theories which thousands cherish,
Pass like clouds that sweep the sky;
Creeds and dogmas, all must perish,
Truth herself can never die.

From the glorious heavens above her,
She has shed her beams abroad,
That the souls who truly love her,
May be called the sons of God.

Worldlings boldly may refuse her,
Close their eyes and call it night;
Learned scoffers may abuse her,
But they cannot quench her light.

Thrones may totter—empires crumble,
All their glories cease to be;
While SHE, Christ-like crowns the humble,
And from bondage sets them free.

God himself will e'er defend her,
From the fury of her foe—
Till she, in her native splendor,
Sits enthroned o'er all below.

A REASON GIVEN.—It is related of a religious and otherwise well-disposed man, but who was occasionally intemperate, that being reproved for his intemperance by an irreligious and profane person, he gave the following answer: "You think it is easy for me to refrain from intemperance as yourself: but the case is very different; for the devil, knowing you to be already safe in his dominion, has no occasion to press you with temptation; moreover, he can not well spare you from his other service. But for me, when I am sober, I am employed in doing good, wherefore he is constantly pressing me with violent temptations to intemperance.

IMPROVED MODE OF [illegible] KILLING.—A su[illegible]'andua, in Austria, has invented a new mode o[illegible]lling by strangulation, which has been approved and adopted by the Govesnment, and the inventor is appointed to superintend the executions. It is a chance if he is not caught in his own trap.

Selected Articles.

COLORS OF THE EARTH.—Colors are spread over all nature with exquisite beauty and adaptation. The earth is clothed with a mantle of delightful green, interspersed with the most brilliant hues of shrubs trees, and flowers. In point of refrangibility, green holds the middle place between the two extremes of violet and red. Neither too dark nor too bright—on it the eye, when wearied with livelier or sombre colors, delights to repose. Were the earth's surface of a black color, it would be distressing even to look upon. as the eye and mind are at present constituted. Or, were white the prevailing hue, our eyes would be dazzled with excessive brightness, and would turn away from all objects with pain and weariness. The color of the sky is deep blue, contrasting pleasantly with the soft green of the earth. The blueness of the sky may be caused by the particles of the air, and the minute globules of moisture, constantly floating among them, reflecting the blue rays; or it may result from the circumstances, that, of all the rays reflected from the earth into the atmosphere, the blue being most refracted, have the least momentum and are consequently more liable to be reflected back to the eye.—Nor is variety of hue wanting in the regions of the air. Clouds, of almost all colors and varieties of tinge frequently move before the delighted eye, like the splendid scenes of a vast theatre. The sparkling lustre of universal sunshine, the lurid glare of the thunder-cloud, the crimson streaks of morning, and the rich and ever-varying glories of sunset, successively solicit our admiration and delight. Yet the eye would tire even of these, if of continual occurrence, and hence the prevailing hue which has been chosen is the pure azure of the unclouded atmosphere, or the sombre shade of the rain cloud.—*Sacred Philosophy of the Seasons.*

STEAM EXCAVATOR.—A correspondent of the Courier thus describes a machine which he has recently seen in operation:—

"Among the many things we saw and experienced during our delightful excursion to the Green Mountains, there is none that dwells more permanently among my reccollections than the operations of this gigantic machine,—one of the proud trophies of the perseverance as well as of the inventive genius of our countrymen. It is hardly worth while to attempt to describe the machine itself, for it would be difficult so to do without a diagram; suffice it to say that they were placed (for there were two of them) one on each side of a hill rising more than one hundred feet above the level of the road, the one working into a mixture of sand and clay as heavy and adhesive as most of our clay banks, and the other on the opposite side of the hill, where the quicksand, gravel and rubble were running down like the sand in an hour glass, which probably gave the name to the hill; and the machine, placed at the true level of the road, having, by means of its swinging beam, a full command of the road for upwards of twenty feet. A large iron scoop, or bucket, made of stout plate iron, with sharp points projecting from its front lip, was, by means of the chains running over pulleys on the extreme end of the swinging beam, brought into contact with the base of the hill, and the power of the steam was brought to bear upon this through a succession of gears, raising it with a sweeping stroke against the the side of the hill. more or less pressure being given, at the will of the manager, who stands at the base of an upright shaft, to which the moving machinery is affixed. When the bucket is filled, it is swung round, and by means of a small chain attached to a catch, the bottom, which is hinged on one side, opens, and the contents are discharged into a car, and the bucket again swung back to its work. A bucket contains one and a half yards cubit measure, which is a full car-load, and its duty while we examined it, was two car-loads every three minutes. If cars sufficient are ready, it loads one every minute. Without a machine of this kind it would take two years, I should think to go through this single hill; with these two machines it can be accomplished in six months, and at one fourth the cost. It is in places like this where it can be worked to most advantage.

For the Scientific American.

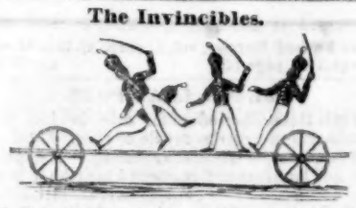
NEW YORK, Aug. 10, 1846.

Sir,—You will confer a favor on one of your friends by giving the following a place in your valuable paper. In conversation with a friend lately from Surinam, I was informed that their crop of Plantain had nearly failed for want of rain, they not having had any for more than one year, and as there are other places where the want of rain frequently causes great distress, if rain could be produced artificially by some easy method it would be time well employed to contrive some way of bringing about so desirable an object, and for that purpose some of your Scientific Readers will please give their opinion as to whether rain may not be produced in the following manner:—Suppose we place some heavy ordnance in some convenient place, point them directly upward and discharge them a number of times in quick succession, not with powder alone but having a ball or shell made of thin copper with a tube reaching to the centre, fill the shell with powder with a fuse in the tube for the purpose of igniting it at its greatest elevation. Now by disturbing the atmosphere in the way described I should suppose rain would be the consequence; if not, why not? Will some of your readers please give their opinion? U. W.

THE ALBANY KNICKERBOCKER.—This paper is one of the most lively and interesting dailies that are published in the United States; and we would request our friend Hastings to send it to us daily instead of three numbers a week. We shall make it all right.

CORRECT SENTIMENTS.—We find the following in the Cherokee Advocate:—"Evil thoughts are worse enemies than lions and tigers, for we can keep out of the way of wild beasts, but bad thoughts win their way every where. The cup that is full will hold no more: keep your heads and hearts full of good thoughts, that bad thoughts may find no room to enter.

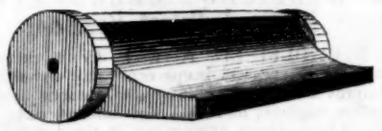
The Invincibles.



"As light as a cork," is a common phrase, and many suppose cork to be the lightest substance that can, as a solid, be made available. The large white pith of the broom-corn stalk is often preferred, however, in cases where extreme lightness is required. Little images of soldiers may be made of this material, with lead feet attached thereto, and the whole may be painted, to conceal the difference of material: and if the lead feet are made somewhat round or swelled on the bottom, the feet will so far preponderate as to raise the figures upright on their feet, from whatever position they may be placed. The images may be conveniently made about three inches high; and if placed in a horizontal position, on their backs or on their faces, they will instantly right up on their feet; thus affording a very interesting and amusing, and to ordinary observers, a very mysterious exhibition. No small affair can be imagined more ludicrous, than some of these images placed on the floor of a carriage,—a toy wagon for instance—while the same is in motion. The quaint positions and comical antics of the group, are "provoking to the risable."

New Inventions.

THE PARALLEL RULE.



We have seldom seen a more convenient, not to say indispensable article, on a small scale, than a recently invented instrument under this name, and which is represented in the cut. Its principal peculiarity consists in having a small metallic axle extending throughout, lengthwise, with a wheel firmly attached to each end. The front edge of the rule is made thin, and rests on the board, while the rear is supported by the wheels, which being thus connected, renders its movements parallel; and while its length is graduated and marked with inches and eighths, the distances of its movements is indicated by the motion of the wheels, the peripheries of which are also marked with inches, &c.,—thus enabling a draughtsman to describe squares and parallels with facility.

MAGNETIC-ELECTRO DANCING FLOOR.—Among the many new scientific projects, and one that appears as rational as a majority of those which are announced by the press, is that of a magnetised floor, projected by a dancing master who has experienced much difficulty in inducing a tolerable degree of activity in some of his indolent city classes. The floor of the hall is to be neatly overlaid with square plates of copper, not in contact with each other, but insulated by narrow strips of ivory between the edges of the plates. Every alternate plate is connected to one of the poles of an electro-magnetic machine, and the other plates are connected to the other pole; all the plates of each set being connected to each other. The soles of the pumps or slippers, worn by the pupils, are to be previously prepared by saturation with some metallic solution. The machine, (which is to be concealed from view) is so adjusted that its connection with a galvanic battery, may be effected by the simple act of pulling a wire or touching a key by the teacher. When the pupils take their places on the floor for a quadrille, the battery connection is made at the same time that the music commences: the dancers will be sure to receive a succession of shocks which will infallibly induce muscular activitity without any injurious effects.

A NEW IMPLEMENT OF WAR.—Mr. Brown, an ingenious engineer, from Illinois, and formerly of Massachusetts, has laid before the board of naval officers, and also the President, a plan for the construction of a steam ship of war, that will be perfectly secure against shot of any kind or weight. Several very scientific officers, having examined the plan, pronounce the opinion that it will be entirely efficient for its object. The vessel may be armed in the usual manner, or as the inventor proposes, with a new and patent element of destruction—liquid fire—which, by steam power, is to be discharged from the vessel, and thrown to any point, and to a considerable distance. This latter peculiarity probably consists in an apparatus for projecting a stream of hot and ignited spirits of turpentine, by the force of its own elasticity. We do not wish nor expect to see the invention adopted.

A SIMPLE BAROMETER.—A writer in the Georgia Farmer gives directions for making a cheap barometer to aid in foretelling the weather. He takes a stick three feet long and attaches to the butt-end thereof a phial, full of air of course, and corked tight. The stick is then suspended in a horizontal position by a thread tied near its centre. When a storm is coming on, the air outside is lighter than that in the phial, of course the phial sinks and indicates a change in the atmosphere. Such a barometer may be made in ten minutes, and some of our young philosophic farmers will incline to have barometers of their own manufacture.

A NEW CLOCK.—Mr. Vanallen, a mechanic of New Jersey, is said to have invented a clock that runs without weights, and has neither cords nor key, requiring no winding up, and is perfectly portable. It is made entirely of metal, and the works are so simple that a child might understand its principle and set it a-going. The inventor claims for it an entire new principle, and has given it the name of the Rack and Pinion Clock. We understand he has applied for letters patent.

A Mauch Chunk paper states that 18,158 *tons* of coal lately passed the weigh locks at that place, in a single week. This is beyond all precedent.

Geological Gleanings in Mississip pi

(Continued from No. 47.)

All believe that marl will prove a mine of wealth to the planters of Hinds, Madison, and the adjacent counties. Marl is found in Adams county in considerable quantity.

In the village of Washington a rich and apparently extensive deposite of fresh water marl has recently been revealed. It abounds in several varieties of fossil shells, some of them exceedingly minute. Such as the cyclostoma, planorbis trivolvis, cyclas, physa, &c., the former greatly predominating.

A careful analysis of this marl, made in New York by an experienced chemist, gives the following result:

Carbonate of Lime . . . . 34.61 parts.
Sand, clay, and a trifle of phosphate of lime, 65.39 parts.

This is, therefore, a rich marl, and the experiments hitherto made with it have been satisfactory,—the benefit derived from its application being most apparent in grasses and small grain.

Mineral waters occur in many situations. In Wilkinson, Claiborne, Copiah, and Hinds counties, sulphur springs exist, some of which have been places of fashionable resort.

The Mississippi Springs, within a few miles of the State capitol, having spacious buildings erected about them, yet enjoyed some favor, and are still frequented in the summer months.

There are also several chabyleate springs, one of which, in Holmes county, is acquiring some celebrity for its curative properties.

A remarkable spring, in Franklin county on the waters of Cole's Creek, was much frequented about twenty-five years since. It is now agreed that it possesses no medicinal properties and its singularity consists in the volume of water flowing from it rising through an apperture of two or three feet in diameter, from a depth not yet fathomed, with a power sufficient to force upward or eject from beneath its surface any one who may plunge into it.

In other words its buoyancy or expulsive power is such that no one can sink in it. It holds in suspension such a quantity of fine sand intermixed with particles of decayed leaves, that the vision is incapable of penetrating its depths.

Salines or briny waters are not known to exist in the interior.

Artesean wells are becoming common in the Prairie region, in the eastern part of the State; They are, however, rarely sunk more than five or six hundred feet in depth, the water rising to within twenty or thirty feet of the surface. In a very few instances has it been brought to the top.

To the strict utilitarian the subject of fossil remains will perhaps posses no further interest than as indicating the localities of the various geological formations of value for economical purposes; a brief enumeration of some of the fossils which occur in the State, and the positions in which they have been found, may nevertheless be expected.

Of the organic fossils, those of the greatest magnitude and most frequent occurrence, are the remains of the mastadon, more commonly and erroneously termed the mammoth. The greatest known accumulation of these in the State, as has been remarked, occurs in the great ravines on Pine ridge, imbedded in loam about twenty feet below the surface of the adjacent plain. A variety of bleached or fossil helices, as well as planorbis physa and cymenae characterize this loam. Parts of some dozzen or more skeletons have been found there within the period of about thirty years. The portions in the most perfect state are the grinders, bones of the legs, the joints of the vertebra, portions of the skull and maxilary bones, and parts of the tusks are also occasionally found well preserved. The other portions have disappeared, or are generally found in too decayed a state to bear removal or exposure to the atmosphere. Certain indications exist, that entire skeletons have been deposited there, the fragments not being transported, leading to the conclusion that these animals perished where their remains are found.

A grinder, in excellent preservation, now in the Cabinet of the National Institute in Washington City, was found many years since in St. Catherine's Creek above the town of Washington, and within a year or two the remains of a skeleton was found in the same creek, about half a mile below the college, and the longer portion of the head, containing all the molars and part of one tusk obtained. This has been well preserved, and is among the most interesting specimens which exist.

In the northern branch of St. Catherine, in the road leading to Natchez, near the city line, in Cole's Creek, near Fayette, in the railroad at Vicksburg (above the tertians) and near the margin of Big Black River, about twenty miles east of Vicksburg, skeletons have also been found.

Associated with these remains we find on Pine Ridge the teeth of the fossil horse, which, by comparison with those of the horse of the present day, would seem to render the antedeluvian not an unfit associate for his huge cotemporary.

The remains of an unique animal, seemingly allied to the megatherium, was obtained in the same principal ravine within a year or two.

The head, containing all the teeth, is nearly perfect, as well as many of the bones of the legs, feet, and other parts, and being partly mineralized, are in excellent preservation. The claws, which are large and powerful, resemble those of the megatherium. It differs from that animal, however, materially in the form and structure of the teeth and grinders, of which there are three kinds, some of them of very singular composition.

It had no incisors, and must therefore have been provided with a trunk or proboscis, as it was, evidently with tusks, which, however, were absent in this specimen.

From the apparent absence of orbits for the eyes, some have thought this animal destitute of that important organ, being misled by those professing a knowledge of anatomy. A comparative anatomist will be at no loss to indicate at once their position to the confusion of all who have had the temerity to deny their existence.

(To be continued.)

The Shakers.

Having had recent occasion to visit at their village, in Enfield, Conn., the United Society of the people called Shakers, and to stop two or three days with them, we claim to know as much about them as those who have merely heard reports concerning them and their peculiarities. It may not be pretended that any of the new associations on the Fourrier principle, have succeeded in establishing that degree of harmony, contentment, and mutual good-will, that prevails among the Shakers: nor may it be pretended that an equal degree of moral integrity, general benevolence and neighborly kindness has been attained by any other villages or communities, those of the same sect excepted, in New England. They not only hold all things in common, as to property, but are evidently well contented and assured that they are greatly favored by Providence, and enjoy privileges superior to those of other communities of mankind. So far from being shut up in seclusion, and restricted from sociality or the means of light and intelligence, they enjoy all the familiarity of brothers and sisters of the same family, and liberally proceed in large companies, occasionally to hear the preaching of other sects and denominations; and manifest no disposition to exclude credible books and papers, from members of their community. Thus far, they conform in practice, as well as profession, to the true principles of christianity: and this circumstance occasions the more regret that instead of being real christians and obeying the true gospel, they have got a book of theology, by some called the "Shakers' Bible," which contains a system of Religion, with injunctions and duties entirely independent of the scriptures of truth. They profess to hold to the bible, but so spiritualize and modify the sense thereof, that there is but little of the most essential truths thereof retained, and indulge in the possession of a large amount of property, contrary to the divine injunction to "lay not up for yourselves treasures upon the earth, &c. They strictly observe celibacy throughout their community, practice occasional dancing as an act of worship, and believe that Christ has already appeared the second time in the person of a woman, and that they have extraordinary gifts of the divine Spirit, &c., yet there are very few among them who evince much of the wild and extravagant fanaticisms. It is gratifying to a visitor to find them intelligent and communicative, instead of manifesting the reserve which a stranger will naturally anticipate as an accompaniment of biggotry or conceited superstition. This peaceable and comparatively happy state of society under such gross and palpable de'usion, can only be accounted for on the principle that the grand adversary is not careful to beset with temptations, those who are already safe in his *net* of delusion and error. And could they be induced to take the true bible in its simplicity for their guide, there is no doubt that they would immediately be assailed with temptations of disaffection, persecution and strife, and would probably become broken up and scattered, as the true christian church has ever been and must be, till the universal kingdom of God is established on the earth.

Religion is Love.

Religion is pure, and like its author, lovely and loving. It never lessens our attachment to one another, chilling our affection, and drying up the spring of charity, and sympathy, and fine feeling, that feed the river of the milk of human kindness in the breasts of man. The religion of Christ warms, but never chills us.

The bosom where it resides feels an influence, and imparts one, too, which angels would recognize as kindred to what they inhale in their own Eden. Who can love the misanthrope, the poor curtailed animal, once a man, but now less than the noble being who is stamped with divine features and born for social enjoyment.

When the Great Teacher was upon earth, his first lesson was love; of every thing good and high, and noble, and extending itself over a world of intelligence. Its first manifestation at the Throne of God, and its last, were for man. This is the lesson we are to learn, if we would be taught by it.

While we exercise this principle, we cannot go astray. It is impossible. We shall stand in a broad place covered by the canopy of Jehovah. And instead of becoming slaves of superstition, or the tools of a party, we shall reverence the image of true religion, find it where we will, in the palace or in the cottage, beaming from face of the Indian, or shining on that of the African. Be the man of high or low degree, tugging at the oar, or galled by the hand of slavery, religion is the same in all.

As she goes forth clothed in the lovely regalia of her order, innumerable blessing attend her. The tears of the widow and the orphan are wiped away. Over the turmoil of life she spreads her hands, stilling the rude rough surges of sorrow, and arching upon the mourner, eyes with the beautiful colors of peace, while around the world she scatters the bright ornaments of serenity and joy.—*Selected.*

THE NEW YORK CHRISTIAN MESSENGER,—at the close of an article in a late number, enquires whether it is consonant with our views and feelings, to make our paper "a medium of *sarcasms* against Universalists or their sentiments;" to which we promptly and emphatically answer, No. The parenthised interrogation in the brief article under the head of "Wouldn't Swap," recently alluded to in the Messenger, was merely intended to signify that we could not see the propriety or pith of the anecdote without that supposition. But if it will be any satisfaction to the editor of the Messenger, we have no hesitation to admit that the parenthisized word might as well have been omitted.

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Sam Scapegrace once devoutly swore,
That while he breathe'd, by Heavens! he'd drink no more;
But Sam meant nothing more, I'm thinking,
Than that he would not breathe *while he was drinking!*

"That assertion," said a western lawyer," is *catamount* to a denial." "Perhaps the gentleman means *tantamount*," said the judge. "No, sir, I mean *catamount*; of course both words are *anonymous*."

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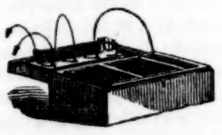
REFERENCES: H Meigs and others, of the American Institute. Prof Mapes President, and C L Barritt, Actuary, of the Mechanics' Institute.

Communications, post paid, to S. FLEET.
August 12—1m

THE TORPEDO ELECRO-MAGNETIC MACHINE.



The subscriber takes this opportunity of apprising the public that, at the last Fair held by the American Institute, he obtained the premium and medal for the best Electro-galvanic machine on exhibition. Since then he has made a new and very important discovery in these by which he can give out the pure magnetic fluid, or the primary current. Its efficacy is truly wonderful.

SAMUEL B. SMITH,
Inventor and manufacturer, 297 1-2 Broadway, left side going up. 43to52*

STATE OF NEW YORK, SECRETARY'S OFFICE,
ALBANY, July 24, 1846.

TO the Sheriff of the City and County of New York: Sir—Notice is hereby given, that at the next General Election, to be held on the Tuesday succeeding the first Monday of November next, the following officers are to be elected, to wit:—A Governor and Lieutenant Governor of this State. Two Canal Commissioners, to supply the places of Jonas Earll, junior, and Stephen Clark, whose terms of service will expire on the last day of December next. A Senator for the First Senatorial District, to supply the vacancy which will accrue by the expiration of the term of service of John A. Lott on the last day of December next. A Representative in the 30th Congress of the United States, for the Third Congressional District, consisting of the 1st, 2d, 3d, 4th and 5th Wards of the City of New York. Also, a Representative in the said Congress for the Fourth Congressional District, consisting of the 6th, 7th, 10th and 13th Wards of said City. Also a Representative in the said Congress for the Fifth Congressional District, consisting of the 8th, 9th and 14th Wards of said City. And also a Representative in the said Congress for the Sixth Congressional District, consisting of the 11th, 12th, 15th, 16th, 17th and 18th Wards of said City.

Also the following officers for the said County, to wit 16 Members of Assembly, a Sheriff in the place of William Jones, whose term of service will expire on the last day of December next. A County Clerk in the place of James Conner, whose term of service will expire on the last day of December next, and a Coroner in the place of Edmund G. Rawson whose term of service will expire on the last day of December next.

Yours, respectfully,
N. S. BENTON, Secretary of State.

Sheriff's Office, New York; August 3d, 1846.

The above is published pursuant to the notice of the Secretary of State and the requirements of the statute in such case made and provided for. WM. JONES,
Sheriff of the City and County of New York.

☞ All the public newspapers in the County will publish the above once in each week until election, and then hand in their bills for advertising the same, so that they may be laid before the Board of Supervisors, and passed for payment.

See Revised Statutes, vol. 1, chap. vi. title 3d, article 3d—part 1st, page 140. aug 18 tE.

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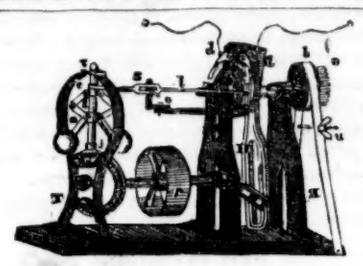

SCHOLFIELD'S CELEBRATED Improved Patent Regulator.

N. CHOLFIELD, Norwich, Conn., continues to manufacture, and keeps constantly on hand, his Improved Patent Regulators, for water-wheels and steam engines; he makes five different sizes, indicated by numbers comencing at the largest size, which is called No. 1, &c..

They are built in a neat and compact form, and printed directions accompany each machine, which will enable any mechanic to put them in operation; as a general rule the different numbers are adapted to different sized wheels, as follows;

For over-shot or breast wheels, 3 feet buckets, No. 5; 5 or 6 feet buckets, No. 4; 6 to 10 feet buckets, No. 3; 8 to 15 feet buckets, No. 2; 12 to 20 ft. buckets, No. 1; greater than 20 feet, No. 1 extra.

The following agencies have been established for the sale of these machines:—Jones, Denney & Ward, Boston; V. J. Bates & Co., Providence, R. I., Charles Schenck, New York city; D. Wight & Lon, Troy, N. Y.; R.M. Vansickler, Albany, N.Y. S.C. Bemis, Springfield, Mass.; Denslow & Beach,; Hartford, Conn.; Joseph B. Hughes, Philadelphia; Wells Chase, and Towner Dunlap & Co.; Baltimore.

N. Scholfield also builds to order Bacon's Improved Pickers, a superior article for cotton or wool.

☞ N. S. has removed to the large new and commodious brick shop (with steam power) a short distance below his old stand; and is now prepared to furnish Cotton and Woollen Machinery of every description; Steam Engines, Turning Engines, Lathes, Shop Tools, or any other article in his line of business, of as good quality, and on as fair terms as any other well appointed establishment in the country.

Norwich Conn., Aug. 18. 19 eowtf.

BALLARD'S IMPROVED JACK SCREW PATENTED.

THE advantage of this Jack Screw for Railroads, Steam-Boiler Builders, and for other purposes, are superior to any other similar machine.

The improvement consists in being able to use either end of the screw, as occasion requires.

It is capable of raising the heaviest Locomotive with ease, being portable, strong, and powerful, and not likely to get out of order.

Many Railroad Companies and Boiler Makers have them in use, by whom they are highly recommended.

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MANUFACTURERS OF
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BOOT WEBBING, &c.,
MONSON, MASS.

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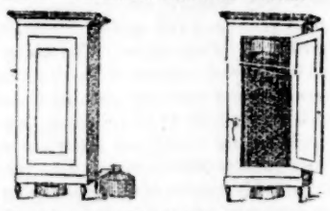
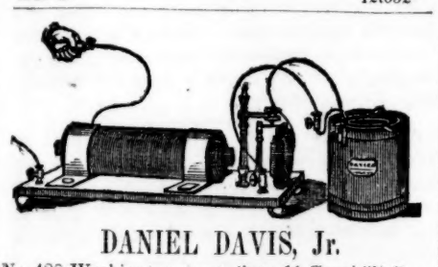


THE subscriber has the satisfaction to announce to the public, that he has perfected, and is prepared to furnish at short notice, a portable shower-bath, far superior in utility and convenience of management, to anything of the kind hitherto offered. It constitutes a light and genteel article of furniture for a bed-chamber, and so perfectly constructed, that either a lady or gentleman can at any moment enjoy a copious shower without the aid of servants, and without having a drop of the water sprinkled on the carpet or floor. And by a slight change in a part of the apparatus, the same may be converted to a steam-bath, either plain or aromatic. These baths are manufactured and may be examined at No. 31 Ann st.

JOHN LOCKE.
Dec 4. 12to52*



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Iron works of all descriptions, erected upon the most improved plans; steam or water powers.

Drawings, plans and estimates made for buildings, furnaces and machinery, and contracts for the whole or any part thereof taken and executed with promptness and despatch; and will also give his personal superintendence in the erection of iron works of all kinds, such as Rolling mills, blast furnaces—of hot and cold blasts—anthricite, bituminous, and charcoal or wood furnaces, forges, trip-hammers; iron, brass, and bell foundry, pudling and heating furnaces, air cupolo chaffery and refinery, or let out furnaces.

N.B.—All letters directed, post-paid, to S. B. MERKEL, Founder-machinist, millwright, draughtsman and Engineer, Philadelphia. Pa. 22tf

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Comprising Weights, Measures, Mensuration of superfices and solids, tables of squares and cubes,—square and cube roots, circumference, and areas of circles, the mechanical powers, centres of gravity, gravitation of bodies; strength, weight, and crush of materials; water-wheels; hydrostatics, hydraulics, statics, centres of percussion and giration; friction, heat, tables of weight and metals; pipes, scantling, and interest; steam and the steam engine.

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TOOL STORE,

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Viz.: Butcher's celebrated edge tools, saws, files, chisels, &c.
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American circular, cross-cut, and mill saws.
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Agent for the sale of Swift's patent coffee and spice ills, suitable for coffee roasters and grocers. Together with a full assortment too numerous to mention. Call and see, and go away supplied satisfied.
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Natural and mineral teeth inserted from $1 to 3 50
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References can be had from several hundred families, also to the medical faculty of the city. 10tf

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THE subscriber has established an agency at his Warehouse, 12 Platt street, New York, for the protection and general advancement of the rights and interests of Inventors and Patentees.

The objects of this agency are more particularly to aid and assist Inventors and Patentees in effecting sales of their inventions and of goods and wares made therewith—and also for the sale and transfer of Patent Rights.

Arrangements have been made with a lawyer familiar with the Patent Laws, who will attend to the legal branch of the business upon reasonable terms. Satisfactory references will be given. Applications may be made to the undersigned personally, or by letter, *post-paid.*

SAMUEL C. HILLS,
45 2d6-x *General Patent Agent.*

Patent Agency at Washington.

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Will prepare the necessary Drawings and papers for applicants for patents, and transact all other business in the line of his profession at the Patent Office. He can be consulted on all questions relating to the patent laws and decisions in the United States or Europe. Persons at a distance desirous of having examinations made at the Patent Office, prior to making application for a patent, may forward (post paid, enclosing a fee of five dollars,) a clear statement of their case, when immediate attention will be given to it, and all the information that could be obtained by a visit of the applicant in person, will be promptly communicated.

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Office on F street, between 7th and 8th sts., opposite the east wing of the Patent Office.

He has the honor of referring, by permission, to Hon. Edmund Burke, Commissioner of Patents; Hon. H. L. Ellsworth, late ditto: Judge Cranch, Washington, D.C.; Hon. R. Choate, Massachusetts, U. S. Senator; Capt. H. M. Shreve, Missouri; H. Knowles, Machinist, Patent Office. april 2.3m*

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